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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Hanson )  
)  
For: SEMICONDUCTOR )  
PROCESSING WORKPIECE )  
SUPPORT WITH SENSORY )  
SUBSYSTEM FOR )  
DETECTION OF WAFERS OR )  
OTHER SEMICONDUCTOR )  
WORKPIECES )  
)  
Serial No.: Unassigned )  
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Filed: Herewith )  
)  
Examiner: Unassigned  
Art Unit: Unassigned

**PRELIMINARY AMENDMENT**

Commissioner of Patents  
Washington, D.C. 20231

Dear Sir:

Please amend the patent application filed concurrently herewith in the following manner prior to calculating the filing fee and prior to substantive examination of the application.

**IN THE TITLE:**

Please amend the title to read as follows:

"PROCESSING APPARATUS WITH SENSORY SUBSYSTEM FOR  
DETECTING THE PRESENCE/ABSENCE OF WAFERS OR OTHER WORKPIECES"

**IN THE CLAIMS:**

Please cancel claims 1-16 and add the following new claims 17-30.

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17. (New) An apparatus for processing a workpiece of the type used in manufacturing microelectronic components, the apparatus comprising:

a processing container adapted to hold a processing fluid used to process the workpiece;  
a workpiece holder for holding the workpiece in a processing position with respect to the processing container during processing;  
an electronic workpiece detection system providing an output signal indicative of the presence and absence of a workpiece on the workpiece holder;  
a control system for executing workpiece handling operations in response to the output signal received from the electronic workpiece detection system.

18. (New) The apparatus of claim 17 wherein the control system executes operational safeguards to prevent mishandling of a workpiece in response to the output signal of the electronic workpiece detection system after the apparatus has experienced a power interruption.

19. (New) The apparatus of claim 17 wherein the electronic workpiece detection system comprises:

an electromagnetic energy emitter for emitting electromagnetic energy in a direction for reflection by a workpiece held by the workpiece holder when a workpiece is present on the workpiece holder;

an electromagnetic energy detector for detecting the presence of reflected electromagnetic energy indicative of the presence of a workpiece held by the workpiece holder.

20. (New) The apparatus of claim 19 wherein said electronic workpiece detection system provides an output signal indicative of the presence of a workpiece based on the angle at which reflected electromagnetic energy is received by the electromagnetic energy detector.

21. (New) The apparatus of claim 17 wherein the processing container and workpiece holder are adapted to electroplate the workpiece.

22. (New) An apparatus for processing a workpiece of the type used in manufacturing microelectronic components, the apparatus comprising:  
a plurality of workpiece supports and corresponding processing bases each defining a processing station;  
an electronic workpiece detection system for detecting the presence and absence of a workpiece at each of the processing stations;  
a control system for executing workpiece handling operations in response to the electronic workpiece detection system.
23. (New) The apparatus of claim 22 wherein the control system executes operational safeguards to prevent mishandling of workpieces in response to the electronic workpiece detection system after the apparatus has experienced a power interruption.
24. (New) The apparatus of claim 22 wherein at least one of the plurality of processing stations is adapted to electroplate a workpiece.
25. (New) An apparatus for processing a workpiece of the type used in manufacturing microelectronic components, the apparatus comprising:  
a plurality of workpiece processing stations, each processing station including  
a workpiece holder for holding a workpiece,  
a processing base adapted to receive a processing fluid used to process the workpiece,  
the workpiece holder and processing base being movable relative to one another between a first position in which a workpiece is loaded to or removed from the processing station and a second position in which the workpiece

holder is proximate the processing base for processing of a workpiece held thereby, and

an electronic workpiece detection system providing an output signal indicative of the presence and absence of a workpiece on the workpiece holder;

a control system for executing workpiece handling operations in response to the output signals received from the electronic workpiece detection systems.

26. (New) The apparatus of claim 25 wherein the control system executes operational safeguards to prevent mishandling of a workpiece in response to the output signal of the electronic workpiece detection system after the apparatus has experienced a power interruption.

27. (New) The apparatus of claim 25 wherein the electronic workpiece detection system comprises:

an electromagnetic energy emitter for emitting electromagnetic energy in a direction for reflection by a workpiece held by the workpiece holder when a workpiece is present on the workpiece holder;

an electromagnetic energy detector for detecting the presence of reflected electromagnetic energy indicative of the presence of a workpiece held by the workpiece holder.

28. (New) The apparatus of claim 27 wherein said electronic workpiece detection system provides an output signal indicative of the presence of a workpiece based on the angle at

which reflected electromagnetic energy is received by the electromagnetic energy detector.

29. (New) The apparatus of claim 27 wherein at least one of the plurality of processing stations is adapted to electroplate a workpiece.

30. (New) An apparatus for processing a workpiece of the type used in manufacturing microelectronic components, the apparatus comprising:

electrolytic deposition means for depositing a metal onto a surface of the workpiece;

workpiece detection means for detecting the presence and absence of a workpiece at the

electrolytic deposition means; and

control means for controlling handling of wafers in the apparatus in response to the workpiece

detection means.

Respectfully submitted,

BY

  
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